Selected Abstracts from the October Issue of the European Journal of Vascular and Endovascular Surgery

Jean-Baptiste Ricco, MD, PhD, Editor-in-Chief, and A. Ross Naylor, MBChB, MD, FRCS, Senior Editor

Prophylactic Perioperative Anti-Thrombotics in Open and Endovascular Abdominal Aortic Aneurysm (AAA) Surgery: A Systematic Review

Wiersema A.M., Jongkind V., Bruijninckx C.M.A., Reijnen M.M.P.J., Vos J.A., van Delden O.M., Zeebregts C.J., Moll F.L.The CAPPA study group (Consensus on Arterial PeriProcedural Anticoagulation) Eur J Vasc Endovasc Surg 2012;44:359-67.

Objective: Heparin is used worldwide by vascular surgeons as prophylaxis for arterial thrombo-embolic complications during open and endovascular arterial surgery. Possible harmful effect of heparin use is more perioperative blood loss, resulting in a higher morbidity and mortality. To evaluate the evidence for the use of heparin during aorto-iliac arterial surgery a review was performed.

Methods: A systematic review was performed of literature from MEDLINE, EMBASE and Cochrane databases, last search performed on March 8, 2012.

Results: For open surgery for abdominal aortic aneurysm (AAA), only 5 studies were eligible for review and for endovascular aneurysm repair (EVAR) only 1 study. Overall methodological quality of the included studies was poor. One randomised trial could be retrieved. Possible harmful effects of heparin were found of increasing operation time, more blood loss and more transfusion requirements when heparin was used for open AAA surgery in one study. No data were found comparing heparin to no intervention for EVAR. One study compared heparin to a direct thrombin antagonist during EVAR, showing no differences in clinical outcomes.

Conclusion: Despite limitations this review showed no compelling evidence on the beneficiary effect of the prophylactic perioperative use of heparin during open surgery for (r)AAA. Authors will promote a randomised controlled multi-center trial on this topic for elective open surgical repair of AAA.

Early Results from the ENGAGE Registry: Real-world Performance of the Endurant Stent Graft for Endovascular AAA Repair in 1262 Patients

Stokmans R.A., Teijink J.A.W., Forbes T.L., Böckler D., Peeters P.J., Riambau V., Hayes P.D., van Sambeek M.R.H.M. Eur J Vasc Endovasc Surg 2012;44:369-75.

Objective: The ENGAGE registry was undertaken to examine the real-world outcome after endovascular abdominal aortic aneurysm (AAA) repair (EVAR) with the Endurant Stent Graft in a large, contemporary, global series of patients.

Methods: From March 2009 to April 2011, 1262 AAA patients (89.6% men; mean age 73.1 years, range 43–93 years) were enrolled from 79 sites in 30 countries and treated with Endurant. Results are described following the reporting standards for EVAR. Follow-up data were tabulated for all 1262 patients at a 30-day follow-up and for the first 500 patients at a 1-year follow-up.

Results: Intra-operative technical success was achieved in 99.0% of cases. Within 30 days, adverse events were reported in 3.9% of patients, including a 1.3% mortality rate. Type-I or –III endoleaks were identified in 1.5% of cases. Estimated overall survival, aneurysm-related survival and freedom from secondary interventions at 1 year were 91.6%, 98.6% and 95.1%, respectively. At 1 year, aneurysm size increased ≥5 mm in 2.8% and decreased ≥5 mm in 41.3% of cases.

Conclusion: Early results from this real world, global experience are promising and indicate that endovascular AAA repair with the Endurant Stent Graft is safe and effective across different geographies and standards of practice. Longer-term follow-up is necessary to assess durability of these results.

Endovascular Treatment of Infected Aortic Aneurysms

Sedivy P., Spacek M., El Samman K., Belohlavek O., Mach T., Jindrak V., Rohn V., Stadler P. Eur J Vasc Endovasc Surg 2012;44:385-94.

Objective: To report on the short- and long-term outcomes of patients with primary infected aortic aneurysm (IAA) treated by stent graft (SG) in two centers.

Material and method: Over a period of 15 years, 32 patients with IAA underwent endovascular treatment. None had undergone previous aortic surgery. The causal relationship was gastrointestinal infection in 9 patients (28%), endovascular diagnostic/therapeutic procedures/resuscitation in 6 (19%), wound infection after previous surgeries in 5 (16%), urinary infection in 4 (13%), urology or gastroenterology procedures in 3 (9%), pancreatitis in 2 (6%), endocarditis in 1 (3%) and phlebitis in 1 (3%) patient. We implanted 11 bifurcated, 10 tubular thoracic, 4 aorto-uni-iliac, 4 tubular abdominal and 1 iliac SG. Two other surgeries were hybrid procedures.

Results: The etiological agent was identified in 28 (88%) patients. Twenty-six (81%) patients survived the 30-day postoperative period. Sixteen (50%) survived to 1-year follow-up and 13 (40.6%) survived to 3-year follow-up. Three patients have survived for less than 1 year and a further 3 for less than 3 years, so far. Among patients with aneurysms situated in central parts of the thoracic and infrarenal aorta there was a better death/survival ratio than among patients with a proximal or distal aneurysm location.

Conclusion: The implantation of a SG may be an alternative to open surgery in selected groups of patients with primary IAA. Aneurysms of the central part of the thoracic or abdominal aorta have a more favorable prognosis with endovascular treatment.

Operator-controlled Imaging Significantly Reduces Radiation Exposure during EVAR

Peach G., Sinha S., Black S.A., Morgan R.A., Loftus I.M., Thompson M.M., Hinchliffe R.J. Eur J Vasc Endovasc Surg 2012;44:395-8.

Introduction: Adoption of endovascular aneurysm repair (EVAR) has led to significant reductions in the short-term morbidity and mortality associated with abdominal aortic aneurysm (AAA) repair. However, EVAR may expose both patient and interventionalist to potentially harmful levels of radiation, particularly as more complex procedures are undertaken. The aim of this study was to assess whether changing from radiographer-controlled imaging to a system of operator-controlled imaging (OCI) would influence radiation exposure, screening time or contrast dose during EVAR.

Method: Retrospective analysis identified patients that had undergone elective EVAR for infra-renal AAA before or after the change to operator-controlled imaging. Data were collected for radiation dose (measured as dose area product; DAP), screening time, total delivered contrast volume and operative duration. Data were also collected for maximum aneurysm diameter, patient age, gender and body mass index.

Results: 122 patients underwent EVAR for infra-renal AAA at a single centre between January 2011 and December 2011. 57 of these were prior to installation of OCI and 65 after installation. Median DAP was significantly lower after installation of OCI (4.9 mGy m^2; range 1.25–13.3) than it had been before installation (6.9 mGy m^2; range 1.91–95.0) ($p = 0.005$). Median screening times before and after installation of OCI were 20.0 min and 16.2 min respectively ($p = 0.027$) and median contrast volumes before and after the change to OCI were 100 ml and 90 ml respectively ($p = 0.21$).

Conclusion: Introduction of operator-controlled imaging can significantly reduce radiation exposure during EVAR, with particular reduction in the number of 'higher-dose' cases.

In-Situ Revascularisation for Secondary Aorto-enteric Fistulae: The Success of Silver-coated Dacron is Closely Linked to a Suitable Bowel Repair

Delva J.C., Déglise S., Bérard X., Dubuisson V., Delva F., Stecken L., Ducasse E., Midy D. Eur J Vasc Endovasc Surg 2012;44:417-24.

Objectives: The purpose of this study was to assess short- and mid-term results of in-situ revascularisation (ISR) using silver-coated Dacron prostheses and bowel repair for management of secondary aorto-enteric fistulae (SAEF).

Design: Single-centre retrospective chart review.

Material and methods: This study includes all the patients treated by ISR using silver-coated Dacron for SAEF between 2006 and 2010. Primary end points were mortality and survival rates. Secondary end points were reinfection-free survival and secondary patency rates.

Results: Eighteen male patients with SAEF with a median age of 64 years were operated by ISR using silver-coated Dacron during the study period without operative death. The 30-day mortality was 22% and the in-hospital mortality rate was 39%. Indeed, during hospitalisation, a duodenal leak was observed in four patients including three who died. Four others patients died due to multi-system organ failure. Median follow-up was 16

months (range 1–66). The survival rate at 12 months was 55%. One duodenal leak was observed leading to death. The reinfection-free survival and the secondary patency rates at 12 months were 60% and 89%, respectively.

Conclusion: In-situ revascularisation with silver-coated Dacron provides acceptable results in terms of mortality. This treatment may be useful for simple vascular reconstruction and allow greater attention to bowel repair that is a determinant in short- and mid-term survival.